U.S. Department of the Interior
Bureau of Land Management

Kremmling Field Office
P O Box 68
Kremmling, CO 80459

ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CON02000-2014-039-EA

CASEFILE/PROJECT NUMBER: LEASE- COC65604: APD Peterson Ridge 02-10H
LEASE- COC66236: APD Peterson Ridge 07-10H
LEASE- COC65600: APD Surprise 02-08H

PROJECT NAME: EE3 APDs Peterson Ridge 02-10H & 07-10H and Surprise 02-08H

LEGAL DESCRIPTION: T. 8 N., R. 80 W., Sec. 10 NWNE, 6th P.M.;
T. 6 N., R. 80 W., Sec. 8 NENE, and Sec. 4 SWSW 6th P.M.;
Jackson County

APPLICANT: EE3 LLC (EE3)

Background/Introduction: The Federal mineral estate administered by the Bureau of Land Management (BLM) as part of its mineral leasing program provides minerals, including fossil fuels, for the benefit and use of the American public and encourages development of domestic oil and gas reserves to reduce dependence on foreign energy supplies. Mineral development is supported by the Mineral Leasing Act (1920 30 USC 181 et. seq.) and the Federal Land Policy and Management Act (FLPMA).

A Notice of Staking (NOS) was received, with on-site reviews of the proposed well sites occurring as soon as weather and schedules permitted. The NOS, on-site review, and Applications for Permit to Drill (APDs) were submitted as follows:

- Peterson Ridge 02-10H NOS was received on November 21, 2013; on-site review occurred on May 9, 2014; APD was received on July 16, 2014.
- Peterson Ridge 07-10H NOS was received on November 14, 2013; on-site review occurred on May 9, 2014; APD was received on July 16, 2014.
- Surprise 02-08H NOS was received on July 31, 2013; APD was received on February 18, 2014; on-site review occurred on May 9, 2014.

On-site reviews were attended by BLM Kremmling Field Office (KFO) staff specialists Darren Long, Wildlife Biologist; Hannah Schechter, Visual Resources and Kelly Hodgson-Elliott; Natural Resource Specialist. Also in attendance were: Liza Rossi, Colorado Parks and Wildlife and Doug Sandridge, Vice-President (Lands) with EE3. Access and road alignment, pad location, and wildlife issues were discussed at the on-site meeting.

PURPOSE AND NEED FOR THE ACTION: The BLM received APDs from EE3 for the Peterson Ridge 2-10H, Peterson Ridge 7-10H and Surprise 2-08H wells for proposed sites to be located on private surface estate, overlying privately owned minerals, to be drilled into leased federal mineral estate, to explore for and develop oil and gas reserves in the United States. Lease development was essentially guaranteed when the leases were issued [Mineral Leasing Act of 1920, 30 USC 181 et. seq., as amended, and the Federal Land Policy and Management Act (FLPMA)]. Federal leases are issued for an initial term of 10-years and are valid indefinitely as long as capability to produce in paying quantities is maintained, either on a leasehold basis or on a unit basis (if the lease is contained in an approved oil/gas unit).

The BLM is preparing the Environmental Assessment (EA) to address potential impacts associated with approval of EE3's APDs. If approved, it would further BLM's objective contained in the 1991 Oil and Gas Leasing and Development Environmental Impact Statement/Record of Decision (EIS/ROD) to: "Facilitate orderly, economic, and environmentally-sound exploration and development of oil and gas resources using balanced multiple-use management."

It is the intent of the applicant to exercise their lease rights to occupy as much of the lease surface as is reasonable for the exploration and extraction of oil and gas.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

PROPOSED ACTION: EE3 LLC (EE3) proposes to drill three new horizontal oil/gas wells in Jackson County, Colorado. The proposed well locations and summary of the proposed actions would be as follows;

- **Peterson Ridge 02-10H and Peterson Ridge 07-10H** wells would be co-located on a single pad, located off of State Highway 14, approximately 5.3 miles southwest of Walden, in T. 8 N., R. 80 W., Sec. 10 NWNE. The requested drilling site is located on private surface estate, overlying privately owned "fee" minerals, but would also access BLM-administered mineral estate. Access to this location would predominantly utilize existing roads; however a new single lane access road, approximately 457' long would be constructed in addition to the actual drill pad. Well pad dimensions would be approximately 465' x 465'. Total site disturbance for drilling the two exploratory oil wells is estimated to be approximately 6.5 acres. A cattle guard and gate would be installed per the surface use agreement with the landowner.

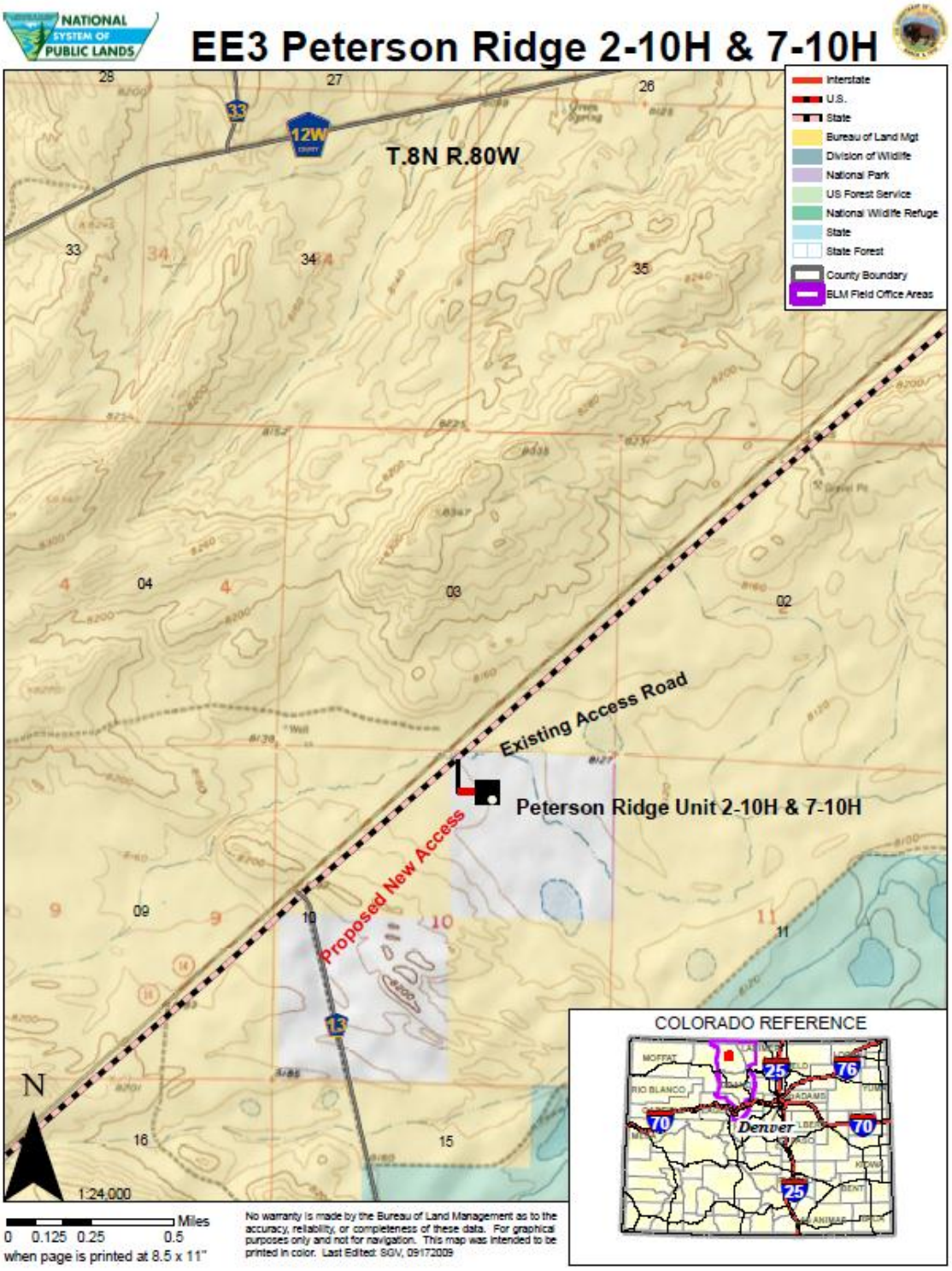
- **Surprise 02-08H** well would be located off of State Highway 14, following Jackson County Road 28 to County Road 11 in T. 6 N., R. 80 W., Sec. 8 NENE. The requested drilling site is located on private surface overlying privately owned "fee" minerals, but also accessing BLM-administered mineral estate. Access to the location would utilize existing roads; including a 2,400' two-track road that would be upgraded and a single lane access road, approximately 420' long that would be constructed in addition to the actual drill pad, which would be approximately 2 acres in size. The well pad and the access road to be constructed are both located on private surface. Well pad dimensions would be approximately 250' x 340'. Total site disturbance for drilling the exploratory oil well is estimated to be approximately 3.5 acres.

The standard Conditions of Approval are incorporated as part of the Proposed Action and included as Attachment #1. The design features developed during the on-site inspection are described below, and are incorporated as part of the Proposed Action. Additionally, the surface-use plan provided by EE3 is incorporated by reference as part of the Proposed Action. Surface disturbance expected from developing the wells is summarized and shown in the following chart, based on the proposed well pad dimensions and new road construction.

Well	**Well pad Disturbance (Acres)**	**Max Vertical Cut (ft.)**	**New Road disturbance (Lin. ft.)**	**Road Disturbance area (Acres)**	**Total site disturbance (Acres)**	**Anticipated Water Depletion plus dust abatement**
Peterson Ridge 02-10H	6	2.5'	457'	0.315	6.5	*11,714 barrels (bbls)
Peterson Ridge 07-10H	0 (Co-located with 2-10H)	2.5'	0 (Co-located with 2-10H)	0 (Co-located with 2-10H)	0 (Co-located with 2-10H)	*11,714 barrels (bbls)
Surprise 02-08H	2	5.93'	Upgrade 2,356' two-track New Access 420'	1.5	3.5	*11,714 barrels (bbls)
Total	8	- - -	3,233'	1.815	10	35,142 barrels (bbls)

*Drilling water estimated at 10,814 bbls; dust abatement, if needed, is estimated at 900 bbls.

See maps below.


NATIONAL SYSTEM OF PUBLIC LANDS
EE3 Peterson Ridge 2-10H & 7-10H
T.8N R.80W
Interstate
U.S.
State
Bureau of Land Mgt
Division of Wildlife
National Park
US Forest Service
National Wildlife Refuge
State
State Forest
County Boundary
BLM Field Office Areas
Existing Access Road
Peterson Ridge Unit 2-10H & 7-10H
Proposed New Access
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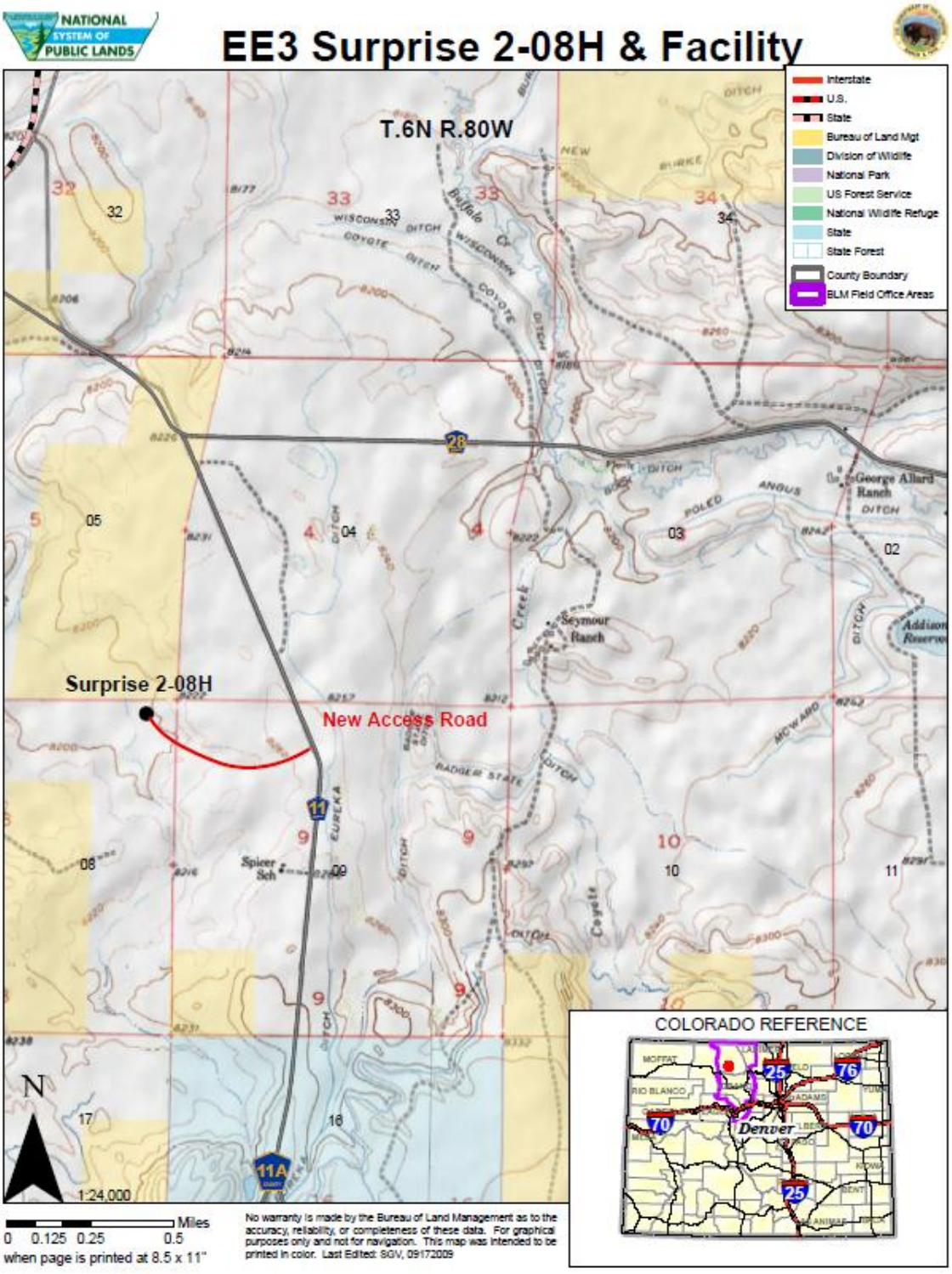
COLORADO REFERENCE
Denver


NATIONAL SYSTEM OF PUBLIC LANDS
EE3 Surprise 2-08H & Facility
T.6N R.80W
Interstate
U.S.
State
Bureau of Land Mgt
Division of Wildlife
National Park
US Forest Service
National Wildlife Refuge
State
State Forest
County Boundary
BLM Field Office Areas
Surprise 2-08H
New Access Road
George Allard Ranch
Seymour Ranch
Spicer Sch
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No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data. For graphical purposes only and not for navigation. This map was intended to be printed in color. Last Edited: SGV, 09172009

Design features of the Proposed Action (as per the Surface Use Plan (SUP) submitted by EE3) for the Peterson Ridge 02-10H and 07-10H, and Surprise 02-08H well sites (SUP available at the Kremmling Field Office):

- The new access roads would have a maximum 40' wide sub-grade with an 14-16' wide crowned dirt driving surface, constructed with a 3:1 or shallower slope for ditches, maintained, and improved as necessary. No culverts are anticipated, however if necessary, culverts would be installed prior to commencement of drilling operations.
- Surfacing material, if necessary, will consist of native material from borrow ditches. The topsoil will be cleared by fanning back during the construction and crowning of the road. Upon commencement of road construction, the topsoil will be replaced in the borrow ditches.
- Access road and traveled portion of the wellpad would be gravel surfaced. If necessary, additional surfacing material would be obtained from commercial sources or an approved borrow area. EE3 would obtain additional material from Sessions & Sons.
- Construction and maintenance would not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet.
- Production equipment will be painted light reflective colors to limit evaporation and waste of liquid hydrocarbons. All above ground permanent structures will be painted Shale Green to blend with the surrounding landscape.
- Production facilities may vary according to actual reservoir discovered and will be engineered upon completion of well tests. Production facilities will be clustered and placed away from cut/fill slopes to allow the maximum recontouring of cut/fill slopes. To reduce the view of production facilities from visibility corridors and private residences, facilities will not be placed in visually exposed locations (such as ridgelines and hilltops). The tallest structure will be no greater than 20' in height.
- If the well is a producer all production facilities will be authorized by a Sundry.
- Water will be transported by truck from the North Platte River at a location on the Grizzly Ranch under existing permits or other available commercial sources under existing permits. If a closer water source is identified and deemed usable, EE3 will notify the Authorized Officer with the necessary information.
- Road watering will be done only if dry conditions dictate.
- Surface water lines would be laid across private surface as agreed upon by the private surface owner.
- Drill fluids would be hauled to an approved disposal facility or recycled for reuse.
- Drill cuttings would be remediated using Eco-sponge for the treatment/remediation of drill cuttings within the confines of the drilling pad. Onsite personnel will oversee the application and management protocols (mixing, staking, etc.) of the cuttings. The EcoSponge mixture will be contained in an area to be bermed along three sides. The cuttings/EcoSponge mixture will be tested to compliance with Colorado Oil and Gas Conservation Commission (COGCC) regulations, including applicable Table 910-1 concentration levels. A commercial laboratory certified to perform the testing according to COGCC specified methods will be utilized. Once testing determines that the cuttings/EcoSponge mixture are determined to be "clean" and are compliant with COGCC regulations for disposal, then the cuttings will either be disposed of to an

appropriate landfill, or left on location to be incorporated with the stockpiled topsoil. The topsoil/cuttings mixture will then be spread to an even depth and seeded during interim reclamation.

- A closed loop system will be used; no reserve pit will be required.
- All human waste, garbage and non-flammable waste materials would be contained and disposed of at a state-approved disposal site.
- Roads and well production equipment, such as tanks, treaters, separators, vents, electrical boxes, and equipment associated with pipeline operation, will be placed on location so as to permit maximum interim reclamation of disturbed areas. If equipment is found to interfere with the proper interim reclamation of disturbed areas, the equipment may be moved so proper recontouring and revegetation can occur.
- Six inches of topsoil will be removed prior to location construction or in any other disturbed areas. Topsoil and spoils pile will be clearly separated. Topsoil will be stockpiled adjacent to the well site within the disturbed area. Topsoil will be segregated from other material, marked as topsoil, and if kept for six months or longer, stockpiles will be reseeded to help retain soil vigor and diminish potential for soil erosion and loss.
- Erosion and control measures will be applied pursuant to EE3 LLC's General Permit to Discharge Stormwater under the Colorado Pollutant Discharge Elimination System and accompanying Stormwater Management Plan.
- EE3 would maintain a file of all MSDS for all chemicals, compounds and/or substances which are used during the course of construction, drilling, completion and production operations for the proposed well.
- Earthwork for interim and final reclamation would be done within six months after completion or plugging operations are finished (weather and wildlife stipulations permitting).
- All disturbed, unused areas would be seeded. If drilled, the drill would be equipped with a depth regulator and seed would be planted between one-quarter and one-half inch deep. If broadcasted, the rate would be doubled (see attached seed mixture).
- Reclaimed areas will be monitored annually. Actions will be taken to ensure that reclamation standards are met as quickly as reasonable practical.
- Annual or noxious weeds shall be controlled on all disturbed areas. An intensive weed monitoring and control program will be implemented beginning the first growing season after interim and final reclamation. Noxious weeds that have been identified during monitoring will be promptly treated and controlled. A Pesticide Use Proposal (PUP) will be coordinated with the BLM Weed Coordinator for approval prior to the use of herbicides.

SCOPING, PUBLIC INVOLVEMENT, AND ISSUES:

Scoping: Internal scoping was initiated when the projects were presented to the Kremmling Field Office interdisciplinary team on July 21, 2014. External scoping was conducted by posting this project on the KFO's public room National Environmental Policy Act (NEPA) register board as follows: Peterson Ridge 02-10H Notice of Staking (NOS) was posted on November 21, 2013; Peterson Ridge 07-10H NOS was posted on November 14, 2013; and the Surprise 02-08H NOS was posted on July 31, 2013.

Issues: No issues were identified during public scoping.

No Action Alternative: The No Action Alternative would deny EE3 the proposed well-site developments and the associated access roads.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):
The Proposed Action is subject to the following plan:

Name of Plan: Kremmling Resource Management Plan, Record of Decision (ROD)

Date Approved: December 19, 1984 (Updated June 1999), and as amended by Record of Decision on December 5, 1991 as described in the Colorado Oil and Gas Leasing and Development Final Environmental Impact Statement (O&G EIS).

Decision Number/Page: ROD (map 3, p. 14)

Decision Language: To facilitate orderly, economic and environmentally sound exploration and development of oil and gas resources using balanced multiple-use management (ROD, p.11). Important wildlife habitat will be protected with the use of no surface occupancy, timing limitations or controlled surface use stipulations and /or lease notices on oil and gas leases, and conditions of approval (COA) on permits (ROD, p. 3).

The proposed Surprise 02-08H well is located on lands identified for a coal land use priority in the ROD. They are federal lands leased for coal or suitable for future consideration for coal leasing. Oil and Gas is considered a compatible use that could occur prior to coal leasing and/or development.

Decision Number/Page: II-B-12 pg.14

Decision Language: Provide the opportunity to utilize public lands for development of facilities which benefit the public, while considering environmental and agency concerns.

AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Standards for Public Land Health: In January 1997, the Colorado BLM approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, special status species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis (EA). These findings are located in specific elements listed below.

Cumulative Effects Analysis Assumptions: Cumulative effects are defined in the Council on Environmental Quality (CEQ) regulations (40 CFR 1508.7) as "...the impact on the environment that results from the incremental impact of the action when added to other past, present, and

reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." Table 1 lists the past, present, and reasonably foreseeable future actions within the area that might be affected by the Proposed Action; for this project the area considered was the Natural Resources Conservation Service (NRCS) 5th Level Watershed. However, the geographic scope used for analysis may vary for each cumulative effects issue and is described in the Affected Environment section for each resource.

Table 1. Past, Present, and Reasonably Foreseeable Actions

Action Description	STATUS		
	Past	Present	Future
Livestock Grazing	X	X	X
Recreation	X	X	X
Invasive Weed Inventory and Treatments	X	X	X
Spring or Water Developments	X	X	X
Wildfire and Emergency Stabilization and Rehabilitation	X	X	X
Wind Energy Met Towers			X
Oil and Gas Development: Well Pads Access Roads Pipelines Gas Plants Facilities	X	X	X
Power Lines	X	X	X
Oil Shale			X
Seismic	X	X	X
Vegetation Treatments	X	X	X

Affected Resources:

The CEQ Regulations state that NEPA documents "must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail" (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an environmental assessment (EA). Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Table 2 lists the resources considered and the determination as to whether they require additional analysis.

Table 2. Resources and Determination of Need for Further Analysis

Determination[1]	Resource	Rationale for Determination
Physical Resources		
PI	Air Quality	See Air Quality Section.
NI	Geology and Minerals	Onshore Order #2 requires that the proposed casing and cementing programs shall be conducted as approved to protect and/or isolate all

Determination[1]	Resource	Rationale for Determination
		usable water zones and prospective mineral zones. Geologic and engineering reviews are completed to ensure that cementing and casing programs are adequate to protect all downhole resources. Although the area proposed for the Surprise 02-08H well is located within lands identified as being suitable for coal lease, no coal leases exist at this time, therefore there would be no impacts to the coal resource.
NI	Soil Resources*	The three wells are on private lands and have not been assessed for land health standards. The Proposed Action and design features minimize the amount of ground disturbance for the three wells, using a disturbed area to locate two wells on one pad (wells 2-10H and 7-10H) and using existing roads as much as possible. Although the proposed action still results in eight acres of disturbance, on a landscape scale, the disturbance will not affect overall land health. The collocated wells are on flat ground and do not have erosion concerns. Well 02-08H has more cut and fill to construct the pad, but the location was modified during the onsite visit to reduce soil concerns. The new layout with design features will not result in accelerated erosion or other soil concerns.
NI	Surface and Ground Water Quality*	The proposed 2-10H and 7-10H well pad is located within the Illinois River 5th order watershed, in a flat low lying area with few defined drainage channels. There is no perennial water near the location and it is unlikely that if runoff leaves the site that it would reach surface waters. The Surprise 02-08H location is within the Grizzly Creek 5th order watershed. It is near (approximately 400 feet) to an intermittent draw with scattered wetland vegetation. The access road is located even further from the draw. It is unlikely that if runoff left the pad that it would reach surface waters. The two well pads are on private lands, not assessed for Land Health Standards, but there are no known water quality concerns in the immediate area. There are no nearby water wells and the proposed drilling and completion plan would protect groundwater in the area.
Biological Resources		
NP	Wetlands and Riparian Zones*	The two proposed pad locations are in the uplands and do not directly impact any wetland resources. The Surprise 02-08H location was adjusted in the field to increase the distance from scattered wetlands located in the downslope swale. The wetlands are mapped as palustrine emergent- temporarily flooded- wetlands. With the design features and pad modifications, there are no anticipated indirect impacts to these wetlands.
NI	Vegetation*	The proposed Action is located on privately owned surface and therefore does not impact BLM vegetation.
NI	Invasive, Non-native Species	The proposed action is located on privately owned surface land and therefore will have insignificant impacts on invasive species introduction or spread to adjacent BLM lands. In addition the design features of the proposed action will help properly mitigate any potential spread or introduction of invasive species to BLM lands. A 2014 invasive/ noxious species inventory revealed little to no species to occur within the project areas.
PI	Special Status Animal Species*	COAs: see analysis

Determination[1]	Resource	Rationale for Determination
NI	Special Status Plant Species*	No confirmed sensitive plants have been identified or documented within the project. Closest colonies of rare plants exist 1.7 miles from the proposed permit and would not be impacted.
PI	Migratory Birds	COAs: see analysis
NP	Aquatic Wildlife*	The permit is proposed on an upland site and is not expected to impact aquatic wildlife.
PI	Terrestrial Wildlife*	COAs: see analysis
Heritage Resources and the Human Environment		
NI	Cultural Resources	The proposed action for Peterson Ridge Unite 7-10H and 2-10H Well pad BLM report #CR-14-23 located no new cultural resource sites. The Surprise Well 2-08H was inventoried in BLM report #CR-14-30. The report located one new historic site 5JA2531 that is not eligible to the National Register of Historic Places and an IF (5JA2532). No avoidance is necessary. The project is a **no effect**, there are no historic properties that are affected.
NI	Paleontological Resources	A paleontological survey was not conducted on private lands. Geologic formations sensitive for fossil resources are present, but will not be impacted by the proposed project. BLM standard "discovery" stipulation is part of the environmental assessment and is to be attached to any authorization allowing project to proceed.
NP	Native American Religious Concerns	Tribal consultation was initiated on May 2, 2014, and to date no tribe has identified any area of traditional cultural or spiritual concern.
NP	Visual Resources	Identifying Visual Resource Management occurs only on lands managed by the BLM. Since these units are all on private surface, they do not have VRM criteria.
PI	Hazardous or Solid Wastes	See analysis for Hazardous or solid wastes
NI	Fire Management	The proposed action would have little to no effect on Fire Regime Condition Class and would have no impact on wildfire response.
NI	Social and Economic Conditions	There would not be any substantial changes to local social or economic conditions.
NP	Environmental Justice	According to the most recent Economic Census Bureau statistics (2009), there are minority and low income communities within the Kremmling Planning Area. There would be no direct impacts to these populations.
PI	Noise	See Analysis.
Resource Uses		
NP	Forest Management	The Proposed Action occurs within a sagebrush vegetation community and would not impact any woodland vegetation.
NI	Rangeland Management	Mineral Operations will not impact BLM Rangeland Management.
NI	Floodplains, Hydrology, and Water Rights	The proposed action is located outside of the floodplain. There are no identified hydrologic issues or concerns. The proposed action involves using private water rights, and must adhere to Colorado water law, as administered by the state of Colorado.
NI	Realty Authorizations	There is one power line ROW for Mt. Parks Electric, Inc. (COC-8482, and two ROW's for phone lines for Centurytel. No impacts would occur in the proposed project area.

Determination[1]	Resource	Rationale for Determination
NI	Recreation	The proposed action is located on and accessed through privately owned surface land. Adjacent lands are within the Extensive Recreation Management Area (ERMA) that provides for unstructured recreation activities such as hunting, hiking, horseback riding, dispersed camping and off-highway vehicle use. The proposed action's location and BLM administered-lands in the immediate are directly adjacent to Colorado Highway 14. There would not be any substantial impacts to the existing uses within the area do to its location adjacent to the highway.
PI	Access and Transportation	See analysis.
NP	Prime and Unique Farmlands	There are no Prime and Unique Farmlands within the project area.
Special Designations		
NP	Areas of Critical Environmental Concern	There are no ACECs within the project area.
NP	Wilderness and Lands with Wilderness Characteristics	The proposed action is located on and accessed through privately owned surface land and is not adjacent to or in the vicinity of Wilderness Study Areas or lands with wilderness characteristics.
NP	Wild and Scenic Rivers	There are no Wild and Scenic Rivers within the project area.
NP	Scenic Byways	There are no Scenic Byways within the project area.

[1] NP = Not present in the area impacted by the Proposed Action or Alternatives. NI = Present, but not affected to a degree that detailed analysis is required. PI = Present with potential for impact analyzed in detail in the EA.
* Public Land Health Standard

The geographic scope for the cumulative impact analysis is Jackson County. The 1991 Colorado Oil and Gas Leasing Final Environmental Impact Statement (O&G EIS) forecasted, for Kremmling Field Office, a total of 225 wells, of which 108 development and wildcat wells would be drilled on BLM lands (Appendix B, B20 & 21). Cumulative impacts for this forecasted development were analyzed in the O&G EIS based upon oil and gas surface disturbance totaling 2044 acres (Appendix B-2).

In regards to past actions regarding oil and gas activity, oil and gas was first discovered in northeastern Jackson County in 1926 by Continental Oil Company. This discovery marked the beginning of oil and gas development in the North McCallum Field. In 1952, oil was discovered in the Coalmont area southwest of Walden. Since that time, 13 fields have been discovered and developed, all in the North Park (Jackson County) area. Within these 13 fields, approximately 475 wells have been completed and approximately 50% of these wells were completed as dry holes.

In regards to present actions, there has been recent interest in the Coalmont Niobrara formation in southern Jackson County. Currently, there are 15 approved drilling permits for Jackson County; of these two have been drilled into federal minerals.

In regards to future actions, there are 3 pending wells planned for development within Jackson County. When added to the impacts of all of the other actions in Jackson County, the cumulative

impacts from this proposal are well within the 1% cumulative surface impacts projected for the Resource Area in the O&G EIS.

AIR QUALITY

Affected Environment: Air quality in the North Park area is generally good, with some winter inversions in the center of the area around Walden and along river valleys. The North Park area is surrounded by several Class I Air Quality Areas (i.e. areas requiring the most stringent air pollution controls). Prevailing winds in the area are from the west-southwest. There are operating wells in the vicinity of the proposed location or in the McCallum oil field. The wells in the vicinity are flaring gas.

Environmental Consequences of the Proposed Action:
Direct and Indirect Effects: The Proposed Action would result in localized short-term increases in carbon monoxide, nitrogen dioxide, ozone, and sulfur dioxide concentrations, but well below applicable ambient air quality standards. Hazardous air pollutant concentrations would be well below standards and the related short and long term cancer risks to well rig operators and nearby residents would be below significance levels. Minor adverse impacts to air quality would result in the immediate vicinity of the well development. The proposed 02-08H pad location would result in an access road from the unpaved county road. This will increase the amount of dust generated from increased road traffic. The proposed use of water pipelines, however, helps reduce the number of water trucks during drilling or fracking operations.

Using directional drilling allows the 2-10H/7-10H pad to be located on relatively level ground and near the highway, reducing the amount of construction and production emissions ($PM_{2.5}$, $PM_{10,}$ vehicle exhaust). It also allows colocation, eliminating one well pad. The use of a closed loop system also eliminates the evaporative emissions from open pits. The flaring of gas does result in VOC and CH_4 emissions. Hauling the produced waters and "frac" fluids to Craig also results in vehicle exhaust from the 100 mile trip. Until additional infrastructure exists in the North Park area, however, a more green completion is considered infeasible. The oil and gas development would occur approximately south of Walden and air quality impacts would not affect town residents or visitors.

Construction of the pads and road would create some fugitive dust, depending on the soil moisture and weather at the time. The project proponent plans on using water to control emissions when necessary. The small amount of dust and its short duration would not impact air quality in the area. Surfacing the road and reclaiming the portion of the pad not needed for production would help reduce dust emissions from the location.

Cumulative Effects: The North Park area is currently experiencing an increase in oil and gas activity, but has not had extensive air quality monitoring to date. The Colorado BLM's Comprehensive Air Resource Protection Protocol (CARPP) outlines the strategy BLM is taking to assess current and future potential air quality impacts from BLM permitted activities. CARPP commits the BLM to using available data, modelling efforts and emission inventories to periodically assess air quality, and annually prepare a comprehensive summary report. The report will evaluate whether air resources are being protected, and if not, require the BLM to collaborate with the state and EPA to address air quality concerns. This adaptive management

strategy will help address the possible cumulative effects within the North Park area and the adjacent Class 1 areas.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Under the No Action Alternative, there would not be the three proposed wells l or associated construction and additional traffic. Air quality would not be affected.

Cumulative Effects: The existing oil and gas wells, motor vehicle traffic, and wood burning stoves would continue to be the primary emission sources in North Park. The BLM would use the CARPP to help manage permitted land management actions that could impact air quality.

Mitigation: None

SPECIAL STATUS ANIMAL SPECIES

Affected Environment:

The Proposed Action is located within the North Platte River basin, which is tributary to the Platte River System. The United States Fish and Wildlife Service (FWS) has determined that any water depletion within the Platte River jeopardizes the continued existence of one or more federally-listed threatened or endangered species and adversely modifies or destroys designated and proposed critical habitat. Depletions may affect and are likely to adversely affect the whooping crane, the interior least tern, the piping plover, the western prairie fringed orchid, and the pallid sturgeon in Nebraska.

Greater Sage-Grouse (*Centrocercus urophasianus*): This BLM sensitive species is currently listed as a candidate species for listing under the Endangered Species Act (ESA) of 1973 and is scheduled to have a formal decision of listing in 2015 by the U.S. Fish and Wildlife Service. Greater sage-grouse are known to occupy the area of the proposed action year round. The United States Department of Interior BLM has the authority for conservation of Greater sage-grouse through (1) the Federal Land Management Policy Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.: 90 stat. 2743; PL 94-579; (2) the Sikes Act, Title II (16 U.S.C. 670 et seq.), as amended; and (3) The BLM Manual 6840, Special Status Species Management (BLM: sensitive species) while the sage grouse is under review for listing under the Endangered Species Act (ESA) (US Fish and Wildlife Service: candidate species). Specifically, the FLPMA guidance on sensitive species authorizes that "the public lands would be managed in a manner that would protect the quality of scientific, scenic, historical, ecological, environmental, air, atmospheric, water resource, and archeological values; that, where appropriate, would preserve and protect certain public lands in their natural condition; that would provide food and habitat for fish and wildlife and domestic animals…(43 USC 1701 Sec. 102 (a) (8))."

Section 06 (C) of the 6840 Manual gives the following guidance on candidate species: "Consistent with existing laws, the BLM shall implement management plans to conserve candidate species and their habitats and shall ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need for the species to become listed." Section 12 of the

6840 Manual states: "Actions authorized by the BLM shall further the conservation of federally listed and other special status species and shall not contribute to the need to list any special status species under provisions of the ESA, or designate additional sensitive species under the provisions of this policy." The Department of Interior Fish and Wildlife Policy: State-Federal Relationship (43 CFR Part 24.4 (c)) states in part that "…the Secretary of Interior is charged with the responsibility to manage non-wilderness BLM lands for multiple uses, including fish and wildlife conservation.

Current science regards the lek, or male strutting grounds, as the focal point for the sage grouse life cycle and therefore management efforts. Hagen and others state that 80% of nesting occurs within 4 miles of a lek site (Hagen et al 2007). Currently there are 3 lek sites in the vicinity of the proposed wells and of those three, two leks remain active. The closest lek is within approximately 1.2 miles of the proposed Surprise 2-08H pad site. Both proposed well sites exist within a 4 mile proximity to leks and currently represent important nesting and early brood rearing habitats. Peterson Ridge 2-10H and 7-10H are proposed on a windswept sagebrush flat that is known to represent an important wintering ground for these birds (L. Rossi, CPW Con. Bio. Pers. Comm.).

White-tailed Prairie Dog (*Cynomys leucurus*): This ground dwelling mammal is a BLM sensitive species that recently was petitioned for federal listing under the ESA but is precluded from listing at this time. Previous densities in the North Park region were estimated at nearly 4 prairie dogs per acre (Tileston and Lechleitner 1966). Current densities are largely unknown but are likely less since the petition for listing was initiated. Prairie dogs create elaborate burrowing systems that can reach up to 4 meters in depth with appropriate soils. Also known as a "keystone species" these mammals are known to support at least 60 other vertebrate species for either food or cover. (Fitzgerald et. al. 1994).

There is a small colony of prairie dogs on the BLM adjacent to the proposed Peterson ridge 2-10H and 7-10H well sites. These animals likely use the debris that currently exists on the proposed location.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Platte River Recovery Implementation Program (PRRIP), established in 2006, is implementing actions designed to assist in the conservation and recovery of the target species and their associated habitats along the central and lower Platte River in Nebraska through a basin-wide cooperative approach agreed to by the States of Colorado, Nebraska, and Wyoming and the U.S. Secretary of the Interior. A programmatic biological opinion was completed on June 16, 2006, that covers new depletions, and in 2009, Jackson County joined the South Platte Water-Related Activities Program (SPWRAP) for ESA coverage under the PRRIP. Jackson County's membership covers agricultural and municipal depletions within the county. The proposed wells are estimated to require 35,142 barrels of water (or less) which would be about 4.53 acre-ft. of water. The operator has secured municipal water to use for the well and the depletion is covered by Jackson County's SPWRAP membership.

Greater Sage-Grouse (*Centrocercus urophasianus*): Direct effects to this species include the removal of 10 acres of nesting and brood rearing habitat and the fragmentation of the sagebrush

community. Of this, 6.7 acres, on Peterson Ridge is wintering habitat. However, the site was selected, in part, due to its current state of disturbance, which has marginal value for this species. The close proximity to the highway, large amount of disturbance and debris on site, and low vegetation density, makes the location unlikely habitat for sage grouse.

Fugitive noise from construction and operation of the site may disturb grouse in the close vicinity. Raising anthropogenic sound decibels above the ambient levels has shown avoidance of certain behaviors in grouse from as far as 4.3 miles away (Piquette et. al. 2014). The operator has agreed to use electric pumps and internal combustion flares at these sites to minimize fugitive noise and light effects. Flares used to burn off natural gas, as well as lighting during the drilling process, would cause localized unnatural lighting that may disrupt a sage grouse's ability to effectively navigate and avoid predators. The constant motion of the proposed well jack is largely unknown by sage grouse and would likely result in avoidance behavior extending from the near vicinity of the well site to the adjacent ridges where visual and audio cues may travel to. The proposed infrastructure may also create a striking hazard that could result in grouse mortality and avoidance behavior.

Indirect effects include the use of the proposed well infrastructure by raptors and ravens (corvid family) that may lead to an increase in nest predation, brood abandonment and avoidance behavior. Decreases in sagebrush cover have shown an increase in sage grouse nest predation by ravens and badger (*Taxidea taxus*) (Coates et. al. 2010). Indirect effects may also stem from overall loss of recruitment caused by the above direct effects.

White-tailed Prairie Dog (*Cynomys leucurus*): Well pad activity near a prairie dog town may elicit a burrowing response on the well pad from loosening finer soils and creating a non-vegetated surface. Heavy equipment nearby may also have the effect of partially or completely collapsing burrow systems. Since the prairie dog burrows were primarily noted on the BLM side of the proposed service route, it is not anticipated that there would be an intentional "take" of any prairie dogs or their habitat as a result of the proposed action as no surface activity is being permitted on BLM land.

Cumulative Effects:

As seen in above Table 1; many land activities historically, currently, and are anticipated to occur in the foreseeable future on and in the near vicinity to the proposed action. Oil extraction and cattle grazing are likely to dominate the land uses of the current and future paradigms as well as current agricultural use on interspersed private land. With reasonably foreseeable oil extraction activities increasing within the next 20 years, these areas that are currently sporadic across the landscape could possibly result in higher densities that may not be able to be tolerated by sage grouse. Additional land uses may also increase fragmentation associated with decreases in sage grouse populations.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects:

Under this alternative, two well sites would not be developed. Greater Sage-grouse or whited-tailed prairie dogs would not be negatively impacted by the above direct and indirect effects of these sites. Habitat connectivity would remain intact relative to the proposed action.

Cumulative Effects:

It is likely that the benefits to sage grouse by the no action alternative would be short lived due to the oil potential available in the area and the ever increasing foreign and domestic demands for this resource. Previous and current well sites at varying levels of reclamation have altered and fragmented the habitat that these birds use.

Mitigation: Conditions of Approval:

1) Timing Limitation: Dec. 16- March 15 for crucial sage grouse winter habitat
2) Timing Limitation: March 15-June 30th for breeding and summer sage grouse.
3) Timing limitation: Well site visitation between 9 am – 4pm during lekking season of March 1- May 15.
4) Voluntary mitigation **ratio of 3:1** (3 acres restoration for every 1 acre of disturbance) for habitat restoration for each activity. This comes as a best management practice request for offsetting impacts to priority sage grouse habitat by providing a net loss of cumulative fragmentation over time. These mitigation credits will be recorded and produced in annual invoices/reports for both the operating company and the U.S. Fish and Wildlife Service to reflect these improvements for sage grouse conservation efforts. Industry companies are encouraged to work closely with the BLM and Colorado Parks and Wildlife biologists to coordinate these efforts in priority areas. These areas will have an agreed upon desired condition and be monitored by the BLM to ensure success of application.
5) No control methods of white-tailed prairie would be permitted on adjacent BLM lands.
6) Consolidated internal combustion flares and electric well jack pumps would be used to minimize fugitive light and noise from the sites.
7) Install raptor perch deterrents on erected infrastructure

Finding on the Public Land Health Standard #4 for Special Status Species:

Since Greater Sage-grouse is sagebrush obligate species it is largely dependent on the vegetation where it resides for food and cover. Standard 3 for vegetation and animal communities shows that this standard is meeting and would continue to meet upon successful reclamation of the site. However, sage grouse lek attendance was down for this area in 2013 for unknown reasons. If this trend continues, the health of these populations may dwindle, causing this standard to no longer meet standard 4 for special status species. Currently this action combined with mitigation measures is expected to continue to meet standard 4.

MIGRATORY BIRDS

Affected Environment: A variety of migratory bird species, primarily birds of prey and songbirds, use the proposed area. Surveys conducted in 1994 by the Colorado Breeding Bird Atlas Partnership recorded many species in the area including Swainson's hawks, Red-tailed hawks, Golden Eagles, Prairie Falcons, Green-tailed Towhees, Mountain and Western Bluebirds, Sage Thrashers, Brewers's sparrow, Killdeer, Horned Larks, American Kestrals, and Common Nighthawks in the sagebrush habitat common to these allotments. The Surprise Unit is expected to have more species diversity due to its proximity to a riparian area where waterfowl and

shorebirds common to the North Park area may nest. The nesting time period is of special importance as the ability to create a nest, incubate, and rear chicks to fledging is a vulnerable time period for birds, and disturbances to nesting activities can lead to larger consequences for individual birds. In addition, because birds are generally territorial during the nesting season, their ability to access and utilize sufficient food is limited by the quality and availability of the territory occupied. During non-breeding seasons, birds are generally non-territorial and able to feed across a larger area and wider range of habitats.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects:

The Project Area and vicinity are already disturbed by cattle grazing practices and oil and gas development. Some birds have adapted to, and currently use, habitat patches within well fields for reproduction and growth. The proposed action would remove a total of 10 acres of nesting habitat from sagebrush obligate species such as the Brewer's sparrow, sage thrasher, and Green-tailed towhee. However, suitable habitat exists in the surrounding area and the project construction would not take place during the primary nesting season of May 15- July 15. Other direct effects include perching and entrapment hazards that newly introduced infrastructure would pose. It is unlikely that these structures would have population impacts to migratory bird species.

Cumulative Effects:

Recent exploration by oil drilling activities combined with the current proposed action and reasonably foreseeable development makes available undisturbed and contiguous sagebrush vegetation communities scarcer for breeding migratory birds. The threshold of disturbance of what many of these species can endure while maintaining adequate production is difficult to quantify and variable from species to species but is likely to have negative population trends over time for some sagebrush obligate species that require larger tracts of continuous sagebrush. Fortunately industry development has not experienced the typical "boom and bust" cycles in this area allowing for species to become more adapted to these types of disturbances. Cumulative structures of producing wells combined with current and future proposed actions have the potential to cause "take" of migratory birds by a variety of methods of daily well operations. These impacts could cause population level effects in the area. Some species of migratory birds may become displaced into other available habitats.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects:

Under this alternative, two well sites would not be developed. Migratory birds would not be negatively impacted by the above direct and indirect effects of these sites. Habitat connectivity would remain intact relative to the proposed action.

Cumulative Effects:

It is likely that the benefits to migratory birds by the no action alternative would be short lived due to the oil potential available in the area and the ever increasing foreign and domestic demands for this resource. Previous and current well sites at varying levels of reclamation have altered and fragmented the habitat that these birds use.

Mitigation: Condition of Approval:
Due to the federal discretion of this permitting process and close proximity to federally managed lands; the BLM reserves the responsibility to manage wildlife resources that are easily mobile across landscape features:

1) No pad or rig construction or erection activities during May 15-June 15 to avoid take of migratory birds during the primary nesting season.
2) Any secondary containment system would be covered in a manner to prevent access by migratory birds. The operator would construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment and cap any open non-production piping to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, and in-line units.

TERRESTRIAL WILDLIFE

Affected Environment:
The proposed action is within an area that provides upland habitat for a variety of wildlife species. Large mammals which use the allotments at least part of the year include mule deer, pronghorn, Rocky Mountain elk, moose, black bear, and mountain lions. Small mammals include coyote, red foxes, bobcat, and a variety of small rodents. Mule deer, pronghorn antelope, and elk use the area yearlong with most use occurring during the winter. The entire proposed project area is within critical winter range for pronghorn and elk. Black bear and mountain lion use of the allotments occurs sporadically yearlong.

Big Game: Wintering habitat conditions are associated with individual survival and body condition needed to support recruitment and therefore populations as female gestation periods occur over harsh winter months before parturition in the spring. Elk, mule deer and pronghorn winter habitats overlap or are adjacent to the proposed action. Recent Data Analysis Unit (DAU) plans produced by Colorado Parks and Wildlife estimate that elk numbers for E3 in this area are nearly double of herd objectives. Conversely, pronghorn populations are reported at being on the lower end of herd objectives for the North Park plan A3. Latest available reports show that mule deer populations in North Park are within herd objectives.
(http://cpw.state.co.us/thingstodo/Pages/HerdManagementPlans.aspx)

Environmental Consequences of the Proposed Action:
Direct and Indirect Effects:
The proposed action would directly remove 6.5 acres of pronghorn winter concentration habitat, as well as fragment this area for a variety of different terrestrial species. Fugitive noise may also represent a direct effect contributing to avoidance behavior. Light pollution caused by construction, rig erection, and natural gas flare may cause unnatural localized impacts that discourage use by terrestrial wildlife far outside of the pad sites. These effects by the proposed action are not thought to impact deer and elk populations to the extent that herd objectives would not be met. Given the proposed Surprise site overlaps with Pronghorn winter concentration and the DAU report for A3 shows pronghorn populations on the lower end of objectives; it is

possible that these populations could be disrupted to the point where they are no longer in balance with their surrounding habitats. Energy infrastructures' largest impact to pronghorn is believed to deviate their winter migration routes (Berger et. al. 2007), and indeed Easterly and others recorded substantially lower population levels near energy development during the winter months (Easterly 1991). EE3 has agreed to clean up a sizable human debris site and move the Peterson Ridge well site locations closer to Colorado State Highway 14 which would offset and alleviate some concerns in the effects discussion.

Cumulative Effects:

Many terrestrial wildlife species would have a large variation of responses from the cumulative impact of the proposed action combined with other oil drilling activities in the area. Big game species are seen as having the largest impact by cumulative effects. Analogous research performed in northeast Wyoming on industry development showed a greater than 50% avoidance of energy production infrastructure in wintering habitat by elk and a heavier reliance on transitional habitats (Buchanan et al. 2014). It is reasonable to believe that pronghorn would experience similar avoidance levels and would become more reliant on habitats outside the selected winter concentration grounds that they depend on during harsh North Park winters.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects:

Under this alternative, two well sites would not be developed and the direct and indirect effect discussion above would not be realized.

Cumulative Effects:

It is likely that the benefits to terrestrial wildlife by the no action alternative would be short lived due to the oil potential available in the area and the ever increasing foreign and domestic demands for this resource. Previous and current well sites at varying levels of reclamation have altered and fragmented the habitat that these animals use.

Mitigation: Conditions of Approval:

1) Timing Limitation: Dec. 1- March 15 for big game at the Peterson Ridge 2-10H and 7-10H well sites.
2) Consolidated internal combustion flares and electric well jack pumps would be used to minimize fugitive light and noise from the sites.

Finding on the Public Land Health Standard #3 for Plant and Animal Communities:

Since terrestrial wildlife populations are closely tied to the condition of the vegetation in standard three, it is reasonable to conclude that this standard would continue to be met once reclamation has successfully taken place.

WASTES- HAZARDOUS OR SOLID

Affected Environment: Some potentially hazardous materials would be used during well drilling and maintenance. In addition, solid waste would be generated during these proposed activities.

According to 29 CFR 1910.1200(g), the oil and gas operator is to maintain a file containing Material Safety Sheets (MSDS) for all chemicals, compounds, and/or substances which are utilized during the course of construction, drilling, completion, and production operations of this project. This file is to be available at all times employees are present at the site. Hazardous materials that may be present at the site include drilling mud and cementing products that are primarily inhalation hazards. Flammable or combustible motor fuels would be present. Proprietary materials necessary for well completion and simulation such as acids and corrosives are often used. Human solid and liquid wastes would be generated primarily during the construction and drilling phases of the project.

Environmental Consequences: There would be no direct, indirect, or cumulative impacts from the Proposed Action. However, this is dependent upon responsible use of chemicals and immediate containment and adequate cleanup in the event of a release. If a release were to occur, the consequences would be dependent upon the volume and nature of the material released. In most situations involving hazardous materials, there are ways to remediate the area that has been contaminated. The two sites are not in close proximity to any sensitive resources or populations that would be at risk until remediation occurred.

In the No Action Alternative, if the application were denied, there would be no hazardous materials used and/or released.

Mitigation: None

ACCESS AND TRANSPORTATION

Affected Environment: The Proposed Action area for wells 2-10H and 7-10H is accessible from Colorado Highway 14 north of Coalmont. An existing route on private lands accesses the proposed drill locations. The proposed area for well 2-08H is located on private lands west of County Road 11. The county road is a maintained route that accesses the private lands' proposed pad and access road location.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Highway 14 and the existing road accessing proposed wells 2-10H and 7-10H would adequately serve the transportation needs under the Proposed Action and be sufficient to handle traffic related to the planned development. No new roads would be constructed for this area. County Road 11 and the proposed new access road crossing private lands for the proposed well 2-08H would be sufficient to handle traffic related to the planned development for that area. In both areas no pipelines would be developed or deployed on BLM-administered lands. If pipelines were to be developed or deployed on BLM-administered lands a

Right of Way would be required. Due to both areas being on private lands without crossing BLM-administered lands there is no impact to public access through potential access restrictions.

The Proposed Action would result in a substantial increase in truck traffic related to the development of the three wells. The largest traffic increase would be during rig-up, drilling, and completion activities. Data indicate that approximately 1,160 truck trips over a 30-day period would be required to support the drilling and completion of each well (Table 3).Once the wells are producing, traffic would dramatically decrease to periodic truck transport visits to haul produced water and condensate collected from the storage tanks at each pad site. Occasional visits in pickups for monitoring or maintenance activities would occur throughout the productive life of the wells. Road degradation may occur over time due to heavy equipment travel. Fugitive dust from non-paved roads and additional noise would be created, however design features for dust abatement would mitigate for fugitive dust in non-paved areas.

Table 3. Traffic Associated with Drilling and Completion Activities

Vehicle Class	Number of trips per well	Percentage of total
16-wheel tractor trailers	88	7.6%
10-wheel trucks	216	18.6%
6-wheel trucks	452	39.0%
Pickup trucks/Passenger Vehicles	404	34.8%
Total	1,160	100.0%

Source: BLM 2006. Note: Trips by different vehicle types are not necessarily distributed evenly during the drilling process and total traffic associated with drilling and completion activities may vary from site to site.

Cumulative Effects: Cumulatively, once development of each well has been completed there would be a small increase in traffic that currently does not exist due to monitoring or maintenance activities. With past, present and foreseeable future actions for development of leased areas there would be an incremental increase in impacts to access and transportation within the North Park region. Additional traffic throughout the area would potentially create cumulative impacts from fugitive dust on non-paved roads if not mitigated for and potentially increase maintenance of the transportation system.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Under the No Action Alternative the proposed wells and new access road would not be built. While there would be no new ground disturbance or impacts to access and transportation the applicant would be unable to exercise their lease.

Cumulative Effects: None.

Mitigation: None.

NOISE

Affected Environment: The Proposed Action is on private lands that has limited development within the general areas. The project area for wells 2-10H and 7-10H, while rural, currently has noise impacts associated with traffic from Highway 14. Two homes are within the vicinity of the proposed project area. One home is located approximately .3 miles south on the access road. The second home is approximately .9 miles south west of the proposed project area and is accessed by County Road 13. The project area for well 2-08H currently has less noise impacts due to being away from Highway 14 and along a county maintained road. The closest home to the proposed project area for well 2-08H is approximately 1.5 miles to the west and currently has two developed well sites closer to the home.

Noise is generally described as any unwanted sound, which are vibrations that travel through the air or another medium and can be heard when they reach a person's or animal's ear. Noise can be weighted and noise intensity (or loudness) is measured as sound pressure in decibels (dBAs). The decibel scale is logarithmic, not linear, because the range of sound that can be detected by the human ear is so great; it is convenient to compress the scale to encompass all the sounds that need to be measured. Each 20-unit increase in the decibel scale increases the sound loudness by a factor of 10. Sound levels have been calculated for areas that exhibit typical land uses and population densities. In rural recreational areas, ambient sound levels are expected to be approximately 30 to 40 dBA (USEPA 1974, Harris 1991). As a basis for comparison, the noise level during normal conversation of two people 5 feet apart is 60 dBA.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action to develop wells on private lands and construct a new access road would result in increased levels of noise during the construction, drilling, and completion phases. The noise would be most noticeable along the roads used to haul equipment and at the pad location. The proposed activities are subject to noise abatement procedures as defined in the COGCC Rules and Regulations (Aesthetic & Noise Control Regulations). Operations involving pipeline or gas facility installation or maintenance, compressors, the use of a drilling rig, completion rig, workover rig, or stimulation are subject to the maximum permissible noise levels for industrial zones. The 2006 revised COGCC noise control rules call for noise levels from oil and gas operations at any well site and/or gas facility to comply with the maximum permissible levels (Table 4) at a distance of 350 feet.

Table 4. Noise Standards for Light industrial, Residential/Agriculture/Rural

Zone	7:00 A.M. to 7:00 P.M	7:00 P.M. to 7:00 A.M
Light Industrial	70 dBA	65 dBA
Residential/Agricultural/Rural	55 dBA	50 dBA

Given the locations of the Proposed Action within the proposed areas and no residential or occupied structure within 350 feet of the proposed well sites the light industrial standard is applicable. Providing notice and working with owners of occupied structures to mitigate for potential noise impacts outside of the 350 foot area is recommended when possible. The allowable noise level for periodic impulsive or shrill noises is reduced by 5 dBA from the levels

shown (COGCC 2008). Short-term increases in noise levels would occur on roads and highways accessing the project areas, primarily during the construction, drilling and completion phases. Based on the Inverse Square Law of Noise Propagation (Harris 1991) and an typical noise level for construction sites of 65 dBA at 500 feet (Table 5), project-related noise levels would be approximately 59 dBA at a distance of 1,000 feet, approximating active commercial areas (USEPA 1974).

Table 5. Noise Levels at Typical Construction Sites and along Access Roads

Equipment	Noise Level (dBA)		
	50 feet	500 feet	1,000 feet
Air Compressor, Concrete Pump	82	62	56
Backhoe	85	65	63
Bulldozer	89	69	63
Crane	88	68	62
Front End Loader	83	63	57
Heavy Truck	88	68	62
Motor Grader	85	65	59
Road Scraper	87	67	61
Tractor, Vibrator/Roller	80	60	54

Sources: BLM (1999a), La Plata County (2002)

Noise impacts would heavily decrease once equipment would move offsite from the project areas. However, during the production phase background noise levels would remain that would be noticeable if a person was adjacent to the development. Noise levels would increase temporarily onsite and on access routes when vehicles enter for monitoring and maintenance activities. If additional equipment is required other than pickup/passenger vehicles the increase in noise levels would be commensurate with those identified in Table 5, however this would likely be short term.

Cumulative Effects: Cumulatively, once development of each well and the production has been completed there would be additional small short term increases in noise associated with traffic due to monitoring or maintenance activities throughout the area. Once in production phase there would be additional background noise attributed with each site. Cumulatively, background noise would be greater in the general areas and be noticeable to occupied structures closer to the well sites but less noticeable to the casual observer.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Under No Action Alternative, the two well sites would not be developed and impacts as discussed in the Proposed Action discussion would not occur.

Cumulative Effects: Under No Action Alternative, the two well sites would not be developed and cumulative effects would not occur.

Mitigation: None.

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INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility	Date Signed
Paula Belcher	Hydrologist	Air Quality; Surface and Ground Water Quality; Floodplains, Hydrology, and Water Rights; Soils; Wetland and Riparian Zones	09/26/2014
Bill B. Wyatt	Archaeologist	Cultural Resources; Native American Religious Concerns; Paleontological Resources	09-29-2014
Zach Hughes	Rangeland Management Specialist	Invasive, Non-Native Species; Vegetation; Rangeland Management	09/25/2014
Darren Long	Wildlife Biologist	Migratory Birds; Special Status Animal Species; Terrestrial and Aquatic Wildlife; Areas of Critical Environmental Concern; Special Status Plant Species	9/23/2014
Kelly Elliott	Natural Resource Specialist	Hazardous or Solid Wastes; Geology and Minerals	09/26/2014
John Monkouski	Outdoor Recreation Planner	Wilderness; Access and Transportation; Recreation, Noise	9/30/2014
Hannah Schechter	Outdoor Recreation Planner	Visual Resources; Scenic Byways; Recreation	09/29/2014
Kevin Thompson	Fire Management Specialist	Fire Management	9/25/14
Ken Belcher	Forester	Forest Management	09/24/2014
Annie Sperandio	Realty Specialist	Realty	9-30-2014
Kelly Elliott	Natural Resource Specialist - Minerals	Project Lead – Document Preparer	09/30/2014
Sue Valente	Planning & Environmental Coordinator	NEPA Compliance	09/26/2014

ATTACHMENTS:

1.) Conditions of Approval (COAs) for Permit to Drill
2.) BLM Recommended Seed Mix
3.) Native American Tribes Consulted

U.S. Department of the Interior
Bureau of Land Management
Kremmling Field Office,
P O Box 68
Kremmling, CO 80459

Finding of No Significant Impact (FONSI)

DOI-BLM-CON02000-2014-0039-EA

BACKGROUND

EE3 LLC (EE3) proposes to drill three new horizontal oil/gas wells in Jackson County, Colorado. The proposed well locations would be as follows;

- **Peterson Ridge 02-10H and Peterson Ridge 07-10H** wells would be co-located on a single pad, located off of State Highway 14, approximately 5.3 miles southwest of Walden, in T. 8 N., R. 80 W., Sec. 10 NWNE. The requested drilling site is located on private surface estate, overlying privately owned "fee" minerals, but would also access BLM-administered mineral estate.

- **Surprise 02-08H** well would be located off of State Highway 14, following Jackson County Road 28 to County Road 11 in T. 6 N., R. 80 W., Sec. 8 NENE. The requested drilling site is located on private surface overlying privately owned "fee" minerals, but also accessing BLM-administered mineral estate.

FINDING OF NO SIGNFICANT IMPACT

Based upon a review of the EA and the supporting documents, I have determined that the Proposed Action is not a major federal action and will not have a significant effect on the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity, as defined at 40 CFR 1508.27 and do not exceed those effects as described in the Kremmling Resource Management Plan (RMP), Record of Decision (ROD) December 19, 1984; Updated February 1999. Therefore, an environmental impact statement is not required. This finding is based on the context and intensity of the project as described below.

Context

EE3 will develop oil and gas resources on federal minerals Lease COC65604, COC66236 and on COC65600 consistent with federal lease rights provided for in the Mineral Leasing Act of 1920, as amended. The projects are site-specific actions located on BLM administered surface and BLM administered federal minerals that do not in and of itself have international, national, regional, or state-wide importance.

Intensity

The following discussion is organized around the 10 Significance Criteria described at 40 CFR 1508.27. The following have been considered in evaluating intensity for this Proposed Action:

1. **Impacts that may be both beneficial and adverse.**

   Activities for production and the drilling and completion of the new wells would result in noise and human presence that could potentially affect certain resources in the project areas. These effects could include the disruption of wildlife, the dispersal of noxious and invasive weed species, and dust effects from unpaved road traffic. However, the Proposed Action helps minimize soil disturbances by using existing roads to the maximum extent possible. The economic health of the county and the State would improve with additional development in the area if the wells are producers.

2. **The degree to which the Proposed Action affects public health or safety.**

   In complying with the Comprehensive Air Resource Protection Protocol (CARPP), BLM will annually review the emissions and pollutants and work with the Colorado Department of Public Health and Environment (CDPHE) and Environmental Protection Agency (EPA) to determine if adaptive management strategies are needed. Construction would create some fugitive dust but the project proponent plans on using water to control emissions when necessary. The small amount of dust and its short duration would not impact air quality in the area. Hazardous wastes should not be a concern, but if a spill does occur, the proponent would be responsible for immediate remediation. There would likely be no impact to public health and safety.

3. **Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.**

   There are no cultural resources, park lands, prime farmlands, wetland, wild and scenic rivers or ecologically critical areas within the project areas.

4. **Degree to which the possible effects on the quality of the human environment are likely to be highly controversial.**

   The federal action of issuing permits to drill for oil and gas resources has been routinely analyzed in site-specific EAs as well as at the EIS level during land use planning. No public comments have been received to indicate the possible effects of the Proposed Action would be controversial.

5. **Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risk.**

   No highly uncertain or unknown risks to the human environment were identified during analysis of the Proposed Action. Risk of harm to human health or the environment would be substantially reduced if the design features and COAs are properly implemented and/or adhered to.

6. **Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.**

   The Proposed Action does not establish a precedent for future BLM actions with significant effects or represents a decision in principle about a future consideration. The federal action of issuing permits to drill for oil and gas resources has been routinely analyzed in site-specific EAs and discussed in the 1984 Kremmling ROD/RMP.

7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.**

   This action is not related to other actions with individually insignificant but cumulatively significant impacts.

8. **The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.**

   There are no known cultural resources that would be affected by the Proposed Action. Standard cultural conditions of approval would be applied to minimize risk to any previously undiscovered resources.

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (ESA) of 1973.**

   There are no endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

10. **Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.**

    Neither the Proposed Action nor impacts associated with it violate any laws or requirements imposed for the protection of the environment.

SIGNATURE OF AUTHORIZED OFFICIAL: /s/ Stephanie Odell
Field Manager

DATE SIGNED: 10/02/2014

U.S. Department of the Interior
Bureau of Land Management
Kremmling Field Office,
P O Box 68
Kremmling, CO 80459

DECISION RECORD

PROJECT NAME: EE3 APDs Peterson Ridge 02-10H & 07-10H and Surprise 02-08H

ENVIRONMENTAL ASSESSMENT NUMBER: DOI-BLM-LLCON02000-2014-0039-EA

DECISION

It is my decision to implement the Proposed Action as described in the attached EA: DOI-BLM-CO-2014-0039-EA. This decision is contingent on meeting all mitigation measures and monitoring requirements listed below.

Mitigation Measures

COMPLIANCE WITH LAWS & CONFORMANCE WITH THE LAND USE PLAN

This decision is in compliance with the Federal Land Management and Policy Act, the Endangered Species Act, and the National Historic Preservation Act. It is also in conformance with the December 19, 1984; Updated February 1999 Kremmling Resource Management Plan (RMP).

ENVIRONMENTAL ANALYSIS AND FINDING OF NO SIGNIFICANT IMPACT

The Proposed Action was analyzed in DOI-BLM-CO-2014-0039-EA and it was found to have no significant impacts, thus an EIS is not required.

PUBLIC INVOLVEMENT

The proposed project was listed on the Kremmling Field Office internet NEPA register and NEPA public room board. No comments were received from the public.

RATIONALE

The Federal mineral estate administered by the Bureau of Land Management (BLM) as part of its mineral leasing program provides minerals, including fossil fuels, for the benefit and use of the American public and encourages development of domestic oil and gas reserves to reduce dependence on foreign energy supplies. Analysis of the Proposed Action has concluded that there are no significant negative impacts and that it meets Colorado Standards for Public Land Health.

ADMINISTRATIVE REMEDIES

Administrative remedies may be available to those who believe they will be adversely affected by this decision. Appeals may be made to the Office of Hearings and Appeals, Office of the Secretary, U.S. Department of Interior, Board of Land Appeals (Board) in strict compliance with the regulations in 43 CFR Part 4. Notices of appeal must be filed in this office within 30 days

after publication of this decision. If a notice of appeal does not include a statement of reasons, such statement must be filed with this office and the Board within 30 days after the notice of appeal is filed. The notice of appeal and any statement of reasons, written arguments, or briefs must also be served upon the Regional Solicitor, Rocky Mountain Region, U.S. Department of Interior, 755 Parfet Street, Suite 151, Lakewood, CO 80215.

SIGNATURE OF AUTHORIZED OFFICIAL: /s/ Stephanie Odell
Field Manager

DATE SIGNED: 10/02/2014

Attachment #1

CONDITIONS OF APPROVAL FOR APPLICATIONS FOR PERMIT TO DRILL (APDs)

Operator: EE3, LLC
The Bureau of Land Management, Kremmling Field Office, address and telephone contacts are:

Address:	1116 Park Av., Kremmling, CO, 80459
Office Phone:	(970) 724-3000 Fax: (970) 724-3066
Natural Resource Specialist:	Kelly Elliott, Office Phone (970) 724-3015

The Bureau of Land Management, Little Snake Field Office, address and telephone contacts are:

Address:	455 Emerson Street. Craig, CO, 81625
Office Phone:	(970) 826-5000 Fax: (970) 826-5022
Petroleum Engineer:	Bob Hartman, Office Phone (970) 244-3041
Assistant Field Manager	Tim Wilson Office Phone (970) 826-5099

All lease and/or unit operations are to be conducted in such a manner to ensure full compliance with the applicable laws, regulations (43 CFR Part 3160), Onshore Oil and Gas Orders No. 1, 2, 3, 4, 5, 6 and 7, Notice to Lessees, and the approved plan of operations. Approval of this application does not relieve you of your responsibility to obtain other required federal, state, or local permits. A copy of the approved Form 3160-3 and the pertinent drilling plan, along with any advisory narratives and conditions of approval, shall be available at the drillsite to authorized representatives at all times. The operator is considered fully responsible for the actions of his subcontractors.

Your review and appeal rights are contained in 43 CFR 3165.3 and 3165.4.

STANDARD CONDITIONS

1. The Kremmling Field Office and the Little Snake Field Office (970) 826-5000 will be given 48-hour notification prior to commencing construction and/or reclamation work.

2. Notify Little Snake Field Office at (970) 826-5000 at least **48-**hours in advance to witness running and cementing of surface casing and testing of the BOPE.

3. The notice of spud will be reported orally to the Little Snake Field Office at (970) 826-5000 at least **48-**hours after spudding. This notice shall include spud date, time, details of spud (hole, casing, cement, etc.), API well number, and date the rotary rig was moved on location. If the spudding occurs on a weekend or holiday, wait until the following regular workday to make this report. The oral notice shall be followed by written notification within 5 working days.

4. No hazardous materials, hazardous wastes, or trash will be disposed of on public lands or on private surface overlying the oil and gas lease. If a release does occur, it will be reported to the Kremmling Field Office immediately at (970) 724-3000.

5. The wellsite disturbance area will be brush cleared and topsoil salvaged before any excavation or fill commences.

6. All survey stakes representing the leveled drill pad, the crest of excavations, the toe of embankments, the reserve pit, and the access road will be in place prior to construction. Staking shall include the well location, two 200-foot directional reference stakes, the exterior dimensions of the drill pad, reserve pit and other areas of surface disturbance, cuts and fills, and centerline flagging of new roads with road flagging being visible from one to the next.

7. Construction activities will not be allowed to commence if the topsoil cannot be separated from the subsoil during adverse environmental conditions (i.e. when soils are frozen or muddy).

8. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.

9. Drainage for runoff water will be provided to divert runoff water away from the reserve pit, cut and fill portions of the well location and the topsoil stockpile. Runoff water that concentrates and forms rills on the well location will be diverted and/or dispersed to prevent erosion of the fill slopes. Any ditches designed to provide runoff drainage will be constructed on a minimal grade and will release water onto undisturbed ground without causing accelerated erosion. The operator will take additional measures if erosion is occurring within the runoff water drainage system.

10. If fossils are discovered during construction or other operations, all activity in the area will cease and the Field Office Manager will be notified immediately. An assessment of significance will be made within an agreed timeframe. Operations will resume only upon written notification by the Authorized Officer.

STANDARD STIPULATIONS

11. If cultural or paleontological resources are discovered during exploration operations under this license, the licensee shall immediately notify the Field Officer Manager and shall not disturb such discovered resources until the Field Officer Manager issues specific instructions.

    a. Within 5 working days after notification, the Field Office Manager shall evaluate any cultural resources discovered and shall determine whether any action may be required to protect or to preserve such discoveries.

    b. The cost of data recovery for cultural resources discovered during exploration operations shall be borne by the licensee, if the licensee is ordered to take any protective measures. Ownership of cultural resources discovered shall be determined in accordance with applicable law.

    c. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the Authorized Officer at (970) 724-3000. Within five working days the Authorized Officer will inform the operator as to:

        1. Whether the materials appear eligible for the National Register of Historic Places;

        2. The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again and,

    d. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the Authorized Officer will assume responsibility for whatever recordation, and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The Authorized Officer will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Authorized Officer that the required mitigation has been completed, the operator will then be allowed to resume construction.

    e. Pursuant to 43 CFR 10.4(g) (Federal Register Notice: Monday December 4, 1995, Vol 60, No. 232) the holder of this authorization must notify the Authorized Officer, by telephone (970) 724- 3000, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the Authorized Officer.

12. The reserve pit will be designed to exclude runoff water and maintain a 2-foot freeboard between the maximum fluid level and the lowest point of containment. The reserve pit will not be used for disposal of any materials or fluids, except for materials or fluids specifically addressed in the drilling program or having a subsurface origin. If oil or oily substance is in the reserve pit, it must be removed within 30 days after the drilling rig is removed. Netting will be installed if oily substance is present in the reserve pit.

13. The perimeter of the reserve pit and production pits, if any, will be fenced with woven wire with 2 strands of barbed wire, properly spaced, on the top and all held in place by side posts and corner H-braces to inhibit entry by livestock and wildlife. The fence will be maintained until backfilling or removal of facilities occurs.

14. In the event downhole operations threaten to exceed the required 2-foot freeboard, regarding reserve pit fluids, immediate notification will be provided to the Authorized Officer with concurrent steps taken to minimize the introduction of additional fluids, until alternative containment methods can be approved.

15. Reserve pit fluids will be allowed to evaporate through one entire summer season (May-September) after drilling is completed, unless an alternative method of disposal is approved. After the fluids evaporate, the reserve pit mud will be allowed to dry sufficiently to allow backfilling. The backfilling of the reserve pit will be completed within 30 days after dry conditions exist and will meet the following minimum requirements:

    a. Backfilling will be done in such a manner that the mud and associated solids will be confined to the pit and not squeezed out and incorporated in the surface materials.
    b. There will be a minimum of 5 feet of cover, or return to approximate original contour on the pit.
    c. When the work is completed, the pit areas will support the weight of heavy equipment without sinking and over time shall not subside over 6-inch depth.

16. If installed, production facilities will be located on cut portions of the existing drill pad.

17. In the event production is established, all land surfaces that are to remain free of vegetation (roads and well location) will be monitored for and protected from wind erosion; dry powdery soil will be treated to minimize wind erosion.

18. Prior approval is required to remove reserve pit fluids from the reserve pit; a request of this type will need to include the destination of the fluids and if the destination is not a State approved facility, the request will include State approval of the destination. Fluids may be moved to another reserve pit within the same field with verbal approval of the authorized officer.

19. All pits, cellars, rat holes and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be backfilled immediately after the drilling rig is released. Pits, cellars and/or bore holes that remain on location must be fenced as specified for the reserve pit in the applicant's Surface Use Plan.

20. In the event a producing well is established, all new production equipment which has open-vent exhaust systems will be constructed in such a way to prevent the entry and perching of birds and bats.

21. All permanent structures (on-site for six months or longer) constructed or installed (including oil well pumpjacks) will be painted a flat, non-reflective, earthtone color to match the standard environmental colors, as determined by the Rocky Mountain Five-State Interagency Committee. All facilities will be painted within six months of installation. Facilities required to comply with OSHA (Occupational Safety and Health Act) will be excluded.

22. Surface facilities should appear to blend in to the existing landscape to the greatest possible extent. Facilities should not be located on ridgelines or extend above them. Facilities should be minimal in size (or located underground) and colored and texture to blend in with the surroundings.

23. A containment berm must be installed around all storage tanks, including temporary tanks. Compaction and construction of the berm surrounding the tank or tank battery will be designed to prevent lateral movement of

fluids through the utilized materials, prior to storage of fluids. The berm must be constructed to contain at minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.

24. Control of noxious weeds will be required through successful vegetation establishment and/or herbicide application. It is the responsibility of the lease operator to insure compliance with all local, state, and federal laws and regulations, as well as labeling directions specific to the use of any given herbicide.

RECLAMATION PERFORMANCE STANDARDS

25. The lessee is required to use the reclamation practices necessary to reclaim all disturbed areas. Reclamation will ensure surface and subsurface stability, growth of a self-regenerating permanent vegetative cover and compatibility with post land use. The vegetation will be diverse and of the same seasonal growth as adjoining vegetation. Post land use will be determined by the Authorized Officer but normally will be the same as adjoining uses.

    Reclamation practices which must be applied or accomplished are: re-grading to the approximate original contour, effectively controlling noxious weeds, separating, storing and protecting topsoil for redistribution during final abandonment, seeding and controlling erosion. If topsoil is not present, or quantities are insufficient to achieve reclamation goals, a suitable plant growth media will be separated, stored and protected for later use. Reclamation will begin with the salvaging of topsoil and continue until the required standards are met. Topsoil that is stored for 1 year or longer will be seeded with naturally occurring species to retain topsoil vigor. If use of the disturbed area is for a short time (less than one year), practices which ensure stability will be used as necessary during the project, and reclamation, with the exception of vegetative establishment, will be completed within one year. If use of the area is for greater than one year, interim reclamation is required on the unused areas. Interim reclamation of the unused areas will begin immediately upon completion of the permanent facility(s).

    For both short and long term projects vegetative establishment will be monitored annually. If the desired vegetation is not established by the end of the second growing season, practices necessary for establishment will be implemented prior to the beginning of the next growing season. Interim reclamation, unless otherwise approved, will require meeting the same standards as final abandonment with the exception of original contour.

    Annual reports consisting of reclamation practices completed and the effectiveness of the reclamation will be provided to the Kremmling Field Office. The first report will be due in January following initiation of reclamation practices and annually thereafter until final abandonment is approved.

    There are numerous reclamation practices and techniques that increase the success rate of reclamation and stabilization. With the exception of those stated above, it is the lessee's prerogative to use those they choose to accomplish the objective. Additional site specific mitigations may be specified and required. However, it is recommended that state-of-the-art reclamation, stabilization, and management practices be used to achieve the desired objective in a timely and cost-effective manner.

    The following definitions and measurements will be used to accomplish and determine if reclamation has been achieved:

    Permanent vegetative cover will be accomplished if the basal cover of perennial species, adapted to the area, is at lease ninety (90) percent of the basal cover of the undisturbed vegetation of adjoining land or the potential basal cover as defined in adjacent undisturbed areas.

    Diversity will be accomplished if at least two (2) perennial genera and three (3) perennial species that are adapted to the area make up the basal cover of the reclaimed area in precipitation zones thirteen (13) inches or less. One species will not make up more than fifty (50) percent of the perennial vegetation by basal cover.

Self-regeneration and adaptation to the area will be evident if the plant community is in good vigor, there is evidence of successful reproduction, and the species are those commonly found in the area.

Surface stability will be accomplished if soil movement as measured by deposits around obstacles, depths of truncated areas, and height of pedestalling, is not greater than three tenths (0.3) of an inch and if erosion channels (rills, gullies, etc.) are less than one (1) inch in depth and at intervals greater than ten (10) feet.

If this standard is not met by the end of the second growing season, two alternatives exist depending on the severity of the erosion:

If erosion were greater than two (2) times the allowable amount, corrective action would have to be taken by the responsible company at that time;

If erosion is less than or equal to two (2) times the allowable amount, and it is determined the erosion occurred during vegetative establishment and the site may become stable, no corrective action would be required at that time. Another measurement would be performed a year later to determine if stability standards had been met. If the original measurements have not increased by more than the allowed standard, the standard would be considered met. However, if the increase were greater than the allowed standard, corrective action would be required.

Subsurface stability (mass wasting event) is of concern if disturbance has included excavation over four (4) feet in depth and greater than 10,000 square feet in area on slopes thirty five (35) percent and greater, or on any erosion-prone slope. When these conditions occur, length of liability for reclamation and final abandonment will continue for ten (10) years following re-contouring to original contour or for such time that climatic patterns provide two (2) consecutive years in which measurable precipitation totals at least 120 percent of average from October 1 through September 30, as measured by data averaged from nearby regional weather stations. The Authorized Officer may waive this stipulation, or portions of it. Such waiver will be documented and justified when not applicable, or when objectives are accomplished through another method.

SITE SPECIFIC CONDITIONS

- If the Surface Use Plan, submitted to the Kremmling Field Office as part of the applications, is altered, the authorized officer must be contacted.

- **TERRESTRIAL WILDLIFE**
    - Timing Limitation: Dec. 1- March 15 for winter big game at the Peterson Ridge 2-10H and 7-10H well sites.
    - Consolidated internal combustion flares and electric well jack pumps would be used to minimize fugitive light and noise from the sites.

- **SPECIAL STATUS SPECIES**
    - Timing Limitation: Dec. 16- March 15 for crucial sage grouse winter habitat.
    - Timing Limitation: March 15-June 30th for breeding and summer sage grouse.
    - Timing limitation: Well site visitation between 9 am – 4pm during lekking season of March 1-May 15.
    - Voluntary mitigation **ratio of 3:1** (3 acres restoration for every 1 acre of disturbance) for habitat restoration for each activity. This comes as a best management practice request for offsetting impacts to priority sage grouse habitat by providing a net loss of cumulative fragmentation over time. These mitigation credits will be recorded and produced in annual invoices/reports for both the operating company and the U.S. Fish and Wildlife Service to reflect these improvements for sage grouse conservation efforts. Industry companies are encouraged to work closely with the BLM and Colorado Parks and Wildlife biologists to coordinate these efforts in priority areas. These areas will have an agreed upon desired condition and be monitored by the BLM to ensure success of application.
    - No control methods of white-tailed prairie would be permitted on adjacent BLM lands.

- Consolidated internal combustion flares and electric well jack pumps would be used to minimize fugitive light and noise from the sites.
- Install raptor perch deterrents on erected infrastructure.

- **MIGRATORY BIRDS**
  - Condition of Approval: 1) No pad or rig construction or erection activities during May 15-June 15 to avoid take of migratory birds during the primary nesting season. 2) Any secondary containment system would be covered in a manner to prevent access by migratory birds. The operator would construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment and cap any open non-production piping to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, and in-line units.

REGULATORY REMINDERS

A. This permit is valid for a period of one year from the date of approval. Any requests for extensions must be submitted prior to the end of the one-year period. If the permit terminates, any surface disturbance created under the permit must be rehabilitated in accordance with the approved plan within 90 days of termination, unless otherwise approved by the Authorized Officer. An expired permit may be reinstated at the Authorized Officer's discretion; however, future operations may require a new application be filed for approval.

B. All drilling operations, unless otherwise specifically approved in the APD, must be conducted in accordance with Onshore Oil and Gas Order No. 2; Drilling Operations.

C. All 7-Day Requirement responses are made part of this APD.

D. There shall be no deviation from the proposed drilling and/or workover program as approved, without prior approval from the Kremmling and Little Snake Field Offices. Safe drilling and operating practices must be observed.

E. Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease, which would entitle the applicant to conduct operations thereon.

F. No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the Kremmling and Little Snake Field Offices. If operations are to be suspended for more than 30 days, prior approval for certain well operations must be obtained and notification given before resumption of operations in accordance with 43 CFR 3162.3-2 and 3162.3-4.

G. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval for subsurface abandonment operations may be granted by the Little Snake Field Office. Oral approvals must be confirmed in writing (Notice of Intention to Abandon (Form 3160-5)) within 15 days. Unless the plugging is to take place immediately upon receipt of oral approval, the appropriate resource area must be notified at least 48 hours in advance of the plugging of the well, in order to provide a representative the opportunity to witness plugging operations.

H. Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) must be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with Onshore Oil and Gas Order No. 1. Daily drilling reports, a copy of all logs, core descriptions, core analyses, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations (with Form 3160-4) will be filed and sent to the Little Snake Field Office, 455 Emerson Street, Craig, Colorado 81625. Samples (cuttings, fluid, and/or gas) will be submitted only when requested by the Authorized Officer.

I. Section 102 (b) (3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provisions of the operating regulations at Title 43 CFR 3162.4-1 (c), requires that "not later than the fifth business day after any well begins production on which royalty is due anywhere on a least site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, or the date on which such production has begun or resumed."

The date on which a well commences production, or resumes production after having been off production for more than 90 days is to be construed as follows:

1. For an oil well, the date on which liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank or the date on which liquid hydrocarbons are first produced into a permanent storage facility, whichever occurs first;

2. For a gas well, that date on which gas is first measured through sales metering facilities or the date on which associated liquid hydrocarbons are first sold or shipped from a temporary storage facility, whichever occurs first. For purposes of this provision, a gas well shall not be considered to have been off production unless it is incapable of production.

If you fail to comply with this requirement in the manner and time allowed, you shall be liable for a civil penalty of up to $10,000 per violation for each day such violation continues, not to exceed a maximum of 20 days. See Section 109(c) (3) of the Federal Oil and Gas Royalty Management Act of 1982 and the implementing regulations at Title 43 CFR 3163.2(e) (2).

J. This APD is approved subject to the requirement that, should the well be successful (completed for production or recompleted for production in a new interval), the Little Snake Field Office must be notified when it is placed in a producing status. Such notification may be provided orally if confirmed in writing, and must be received in the Little Snake Field Office by not later than the 5th business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:

1. Operator name
2. Well name, number, and location
3. Date well was placed on production
4. The lease, or communitized tract, or unit participating area to which the well's production is attributable.

K. A separate Monthly Report of Operations, Form 3160-6, shall be submitted for each lease, unit participating area, or communitization agreement, beginning with the month in which drilling operation commence, in accordance with 43 CFR 3162.4-3. This report shall be sent to Minerals Management Service, Production Accounting Division, P.O. Box 17110, Denver, Colorado 80217.

L. If at any time the facilities located on public lands authorized by the terms of the lease are no longer included in the lease (due to contraction in the unit or other lease or unit boundary change) the BLM will process a change in authorization to the appropriate statute. The authorization will be subject to appropriate rental or other financial obligation determined by the Authorized Officer.

M. All produced liquids must be contained, including the dehydrator vent/condensate line effluent. All production pits must be bermed and fenced.

N. Gas produced from this well may not be vented or flared beyond an initial, authorized test period of 30 days or 50 MMCF following completion, whichever comes first, without the prior written approval of the authorized officer. Should gas be vented of flared without approval beyond the authorized test period, you may be directed to shut the well in until the gas can be captured or approval to continue venting or flaring is granted and you may be required to compensated the lessor for that portion of the gas that was vented or flared without approval which is determined to have been avoidably lost.

O. Produced water from newly completed wells may be temporarily disposed of into the reserve pit for a period of up to 90 days. During the 90-day periods, an application for approval of a permanent disposal method and location will be submitted according to Onshore Order No. 7 for approval.

P. A schematic facilities diagram as required by CFR 43, Part 3162.7-5, shall be submitted to the Little Snake Field Office within 60 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with 3162.7-5(b).

Q. The permit holder is required to use certified weed free hay, straw and mulch on BLM lands in Colorado should the use or storage of hay, straw or mulch be necessary. Any person who knowingly and willfully violates this regulation may be subject to a fine of not more than $1,000 or imprisonment of not more than 12 months, or both as defined in 43 USC 1733(a).

Attachment #2 Seed Mix

Drill Seeding Rate

SEED NAME	Application Rate PLS/Acre	Seeds/SQ. FT.
Grasses		
Western wheatgrass Pascopyrum smithii, variety. Arriba	2.97	7.5
Thickspike Wheatgrass Elymus lanceolatus var. Critana	2.13	7.5
Bluebunch wheatgrass Pseudoroegneria spicata, var. Secar (Alternate var. Goldar)	2.51	7.5
Sheep fescue Festuca ovina, var. Covar	.62	7.5
Totall	8.23	30
Forbs		
Alfalfa var. Ladak	.73	3.5
Big sagebrush Artemesia tridentata ssp. wyomingensis	.06	3.5
Total	.79	7

* Big sagebrush and Alfalfa may be seeded when it would be better for success
* Broadcast seeds at twice the rate

(Seed tags must be submitted to BLM after seeding.)

*** do not seed prior to October 1, to avoid sprouting.**

MULCH

Native Hay or Straw 2,000 lbs. X acres =

-Mulch is optional but it will help reclamation results.
-Must be Certified Noxious Weed Free

Attachment 3

NATIVE AMERICAN TRIBES CONTACTED:

Colorado Commissioner of Indian Affairs
Attn: Ernest House Jr., Exec. Sec.
130 State Capitol
Denver, Colorado 80203

Richard Brannen Sr., No. Arapaho Business Council
Northern Arapaho Business Council
P O Box 396
Fort Washakie, Wyoming 82514

Robert Goggles, NAGPRA Rep.
Northern Arapaho Business Council
328 17 Mile Road
Arapaho, Wyoming 82510

Jo Ann White, THPO Director
Northern Arapaho Tribe
P O Box 396
Fort Washakie, Wyoming 82514

Mr. Norman Tidzump, Hist. Preserv. Officer
Shoshone Tribe
P O Box 1008
Fort Washakie, Wyoming 82514

Ivan Posey, Shoshone Business Council
Shoshone Tribe
P O Box 538
Fort Washakie, Wyoming 82514

Clement Frost, Chairman
Southern Ute Indian Tribe
P O Box 737
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Neil Cloud, NAGPRA Rep.
Southern Ute Indian Tribe
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Curtis Cesspooch, Chairman
Uintah & Ouray Tribal Business Center
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Fort Duchesne, Utah 84026

Betsy Chapoose, NAGPRA Rep.
Uintah & Ouray Tribal Business Council
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Ernest House, Sr. Chairman
Ute Mountain Ute Tribe
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Terry Knight, Sr., NAGPRA Rep.
Ute Mountain Ute Tribe
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